中央研究院 114 年度「關鍵突破研究計畫」計畫書
2025 Academia Sinica Grand Challenge Program (GCP) Proposal

計畫名稱 (中文)：
Project Title (English)：

計畫(總)主持人 Project PI：

申請單位 Affiliation：

計畫類別 GCP Category：

1. Executive Summary and Chinese Abstract

Please address each of the following questions briefly and precisely:

1.1 What is the grand challenge problem to be addressed? Which part of the problem will be solved?

1.2 What is your major idea? How innovative it is? How are you going to solve the problem you identified?

1.3 How much impact you will make after the 5-year funding period, if the project is successful.

In addition to an Executive Summary answering to the above points in a total of ≤ **250 English words**, provide also a **<u>Chinese Abstract</u>** based on the above statements in less than 500 words.

2. Summary of Previous Research Accomplishments (Project PI only).

Summarize and highlight your previous research accomplishments in the **last <u>five</u> years**. Identify 3 recent publications most representative of your accomplishment that are relevant to the research work to be undertaken in this proposal (reprints to be submitted with the application material). Do not include manuscripts in preparation or submitted.

*The page limit for this section is <u>**one**</u> page.*

3. Research Plan

3.1 The problem to be solved. Define the identified grand challenge problem(s), focusing on its importance. Describe the state-of-the-art and identify the current bottleneck. *(about half a page recommended)*

3.2 The innovative ideas proposed. Define the specific aims of the project. Specifically highlight the innovative approach(es) you propose, including its rationale, originality, and scientific merit. *(about half a page recommended, to be elaborated later in Section 3.4)*

3.3 The potential impact of the work. Describe how it may lead to a breakthrough and transform the field if the project is successful. Focus on its scientific and/or societal impact. *(about half a page recommended)*

3.4 Plans to test the ideas. Describe the research approaches in each specific aim. Identify the milestones and the timeline of accomplishing them. Focus on the logic and scientific or technical challenges. Also describe international competitiveness of your project.

*The total page limit for this section <u>including</u> references is <u>**ten**</u> pages; by A4 size, 1 inch or 2.54 cm margins for all sides, single spaced, font: Times New Roman or Calibri, 11 point. Smaller font size 9 or 10 is allowed only for Figure legend and Bibliography.*

4. Changes/Progress made since last Application

Please state if this application is an extension of any of your ongoing or completed grant support, or previous failed application(s) to any of the AS grant program. *You may simply provide a statement or two if this has already been elaborated in the Research Plan section. You can ignore this Section if non-applicable but failure to disclose the relevant information may disqualify your current application.*

4.1 If this is an application to extend or renew your ongoing or completed grant support (provide grant number and title) for related research topics and aims, summarize the major accomplishment thus far and how the current proposal may capitalize on this recent progress to make further advances in the next 5 years.

4.2 If this is an application based on similar research aims proposed in previous round of failed application (to any AS grant type), describe the major changes you have made in response to Reviewers' comments and/or after taking into considerations progress in the field (either your own or others) since the proposal was last submitted. Point-to-point rebuttal is not required.

*The page limit for this section is **one** page.*

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5. Budget Plan and Justification

年度 Year			1	2	3	4	5
業務費 Operating Expenses (A)	教育訓練費 Training	International					
		Domestic					
		Mainland China					
	旅費 Travel	International					
		Domestic					
		Mainland China					
	臨時人員酬金 Personnel Salary						
	研究相關耗材費用 Consumables						
	業務費總額 Total (A)						
機械(儀器) 設備費 Equipment (B)	非資訊相關 Non-Computer Item						
	資訊相關 Computer-related Item						
	設備費總額 Total (B)						
獎補助費 Graduate Student Stipend (C)							
總金額 Total (T) = (A)+(B)+(C)							

*單位: 新臺幣元 *Unit: NTD; 3rd year funding is subject to satisfactory performance

Briefly justify the total budget requested and how it will be distributed among the co-PIs for integrated team.

*The Total Budget Plan (using Table above) and the descriptive justifications to be provided should not exceed **one** page.*

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6. Personal Track Record (for every Project PI and Co-PIs)

6.1 Output from Recently Completed (2022-2024) **and Current AS Grant Support**

List only publications that carry statement specifically acknowledging the relevant AS grant support. (Include Abstract as appeared in the cited publication).

6.2 Biographical Sketch (for Division of Mathematics and Physical Sciences & Division of Life Sciences), or **Curriculum Vitae** (CV, for Division of Humanities and Social Sciences)

Each PI and co-PI should use the template provided in the next page to prepare their **Biographical Sketch**, which should include among others:

i) a **Personal Statement** - brief self-introduction of research path/career in 200-300 words;

ii) **Contributions to Science** - a summary of major research achievements by referring to selected key publications and other forms of contributions, their significance and impact;

iii) **Complete/Selected List of Recent Publications** - selected key publications can be combined with a more complete list of publications in the last 5 years, but keep to the total page limit

For PIs in Division of Humanities and Social Sciences using an alternative **CV** format, the content should include Contact Information, Current Affiliation and Title, Education and Professional Experiences, Research Interests, Awards and Honors, and Selected Publication List.
個人簡歷 應含 聯絡資訊、所屬單位與職稱、學經歷、研究領域、獎項及榮譽、代表性著作目錄

*This section including list of publications should not exceed **four** pages for each PI and co-PIs.*

BIOGRAPHICAL SKETCH

NAME: 中文姓名：

INSTITUTE/RESEARCH CENTER:

Current POSITION:

EDUCATION (Begin with baccalaureate or other initial professional education)

INSTITUTION AND LOCATION	DEGREE	DURATION MM/YY-MM/YY	FIELD OF STUDY

EMPLOYMENT (Include postdoctoral training)

INSTITUTION AND LOCATION	POSITION TITLE	DURATION MM/YY-MM/YY	FIELD OF STUDY

I.   PERSONAL STATEMENT
A brief self-introduction of research path/career, 200-300 words

II.   HONORS
Include Professional distinctions and service, honors and selected speaking invitations

III. CONTRIBUTIONS TO SCIENCE
Summarize major research achievements and describe their significance and impact

IV. LIST OF PUBLISHED WORK
Provide a complete or selected list of recent (last 5 years) publications to keep within the total four-pages limit. Earlier key publications can also be provided here, or under item III above.

Total should not exceed 4 pages

6.3 Current and Pending Grant Support

List any current (ongoing) and pending projects/proposals funded by Academia Sinica and external agencies. AS allows submission of similar proposals to more than one funding sources but any overlapping similarity and/or requested cost-sharing items must be fully disclosed and justified to avoid duplicated funding. Any incomplete or inaccurate information will adversely affect the consideration of this proposal.

Please be reminded that,

1. applicants should not submit the same proposal for different types of AS grant program during the same grant application cycle;

2. applicants must fully disclose if similar proposal has also been submitted to NSTC and other funding agencies at the time of submitting this proposal to AS, with the amount requested and any duplicated items fully described and justified here; any eventual cost-sharing, joint or supplemental funding by multiple agencies must comply with their respective funding policies;

3. applicants must pro-actively inform the AS grant program office if the funding decision of any pending application is known before the outcome of this application is announced; applicants should withdraw current proposal if adequate funding has been secured.

主持人/共同主持人 Project PI/Project Co-PI:_____

1	(1) Funding Agency and Project Type 補助單位及計畫類型: e.g. 中研院/國科會 個人型/整合型 (2) Grant Title and number 計畫名稱與編號： ● Status 計畫狀態: □ Current 執行中 □ Pending 申請中 ● Research Role 計畫擔任角色: □ Project PI 計畫(總)主持人 □ Project Co-PI 計畫共同主持人 □ Subproject PI/Co-PI 分支計畫(共同)主持人 (3) Project Period 執行期間: _____(YYYY/MM) to _____(YYYY/MM) (4) Funding Amount in thousands of NTD 補助總額 (仟元) *(table below)* (5) Is there any relationship between this funded/pending grant project and the current application? 此計畫是否與本次申請計畫有相關? □ No □ Yes. (Please specify details 請敘明其關聯性)

Year 年度	Total Project Amount 總研究經費	Individual Project Amount 個人研究經費

Extend this form as necessary to include all funding sources.